

ANYWAVE



ATSC VHF III 500W PA User Manual

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FCC Compliance

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense

The antenna(s) used for this transmitter must be fixed-mounted on the outdoor permanent structures. RF exposure compliance is addressed at the time of licensing, as required by the responsible FCC Bureau(s), including antenna co-location requirements of §1.1307(b)(3).

Changes or modifications not expressly approved by Anywave Communication Technologies, Inc. could void the user's authority to operate the equipment.

Disclaimer

Information provided by Anywave Communication Technologies is believed to be accurate and complete; however, no liability can be assumed for its use.

The manufacturer makes no representations or warranties, either expressed or implied, by or with respect to anything in this manual, and shall not be liable for any implied warranties of fitness for a particular purpose or for any indirect, special, or consequential damages. Information in this document is subject to change without notice and does not represent a commitment on the part of the manufacturer.

USE OF THIS PRODUCT IN A MANNER OTHER THAN DESCRIBED IN THIS MANUAL MAY RESULT IN DAMAGE TO THE EQUIPMENT AND/OR PERSONAL INJURY.



PLEASE READ THIS MANUAL IN ITS ENTIRETY BEFORE ATTEMPTING TO INSTALL THE EQUIPMENT. CONTACT ANYWAVE WITH ANY QUESTIONS OR CONCERNS YOU MAY HAVE.

Unpacking

Carefully unpack the equipment and perform a visual inspection to determine if any apparent damage has occurred during shipment. Please notify the delivery carrier and Anywave immediately if shipment damage has occurred. Retain all original shipping materials.

Please locate and reference the Packing Check List to verify you have received all components of your system. Retain the Packing Check List for future reference.

Also, please identify and remove all packing materials and supports (foam pads, etc.) prior to initial turn on of the equipment.

Returns and Exchanges

Written approval and a Return Authorization Number (RAN) are required from Anywave for all equipment returns. Please direct all return inquiries to the Anywave Service Department at support_us@anywavecom.com, providing the Sales Order number and Serial Number(s) of the equipment. Complete details regarding the nature and circumstances of your return must be included in your RAN request. Proper handling and return shipping instructions will be provided with an approved RAN number.

Technical Support

Technical support and troubleshooting assistance for Anywave Transmitters is available through the Anywave Service Department during normal business hours (8:00 AM - 5:00 PM CST) at (847) 415-2258. Email questions to support_us@anywavecom.com.

Note: For all service and support requests, you will need to provide the Serial Number of the
equipment with your Sales Order number. For future reference, please record that information
here:

Anywave Communication Technologies Inc. 300 Knightsbridge Parkway, Suite 150, Lincolnshire, IL 60069

Tel: (847) 415-2258 Fax: (847) 415-2112

http://www.anywavecom.net





WARNING

THE VOLTAGES, CURRENTS, AND RF ENERGY IN THIS EQUIPMENT ARE DANGEROUS. PERSONNEL MUST AT ALL TIMES OBSERVE ALL SAFETY WARNINGS, INSTRUCTIONS, AND REGULATIONS.

IN THE CASE OF EMERGENCY, ENSURE THAT ALL POWER HAS BEEN DISCONNECTED.

ALWAYS DISCONNECT POWER BEFORE REMOVING COVERS, ENCLOSURES, OR SHIELDS. DO NOT PERFROM SERVICE ON THE EQUIPMENT WHEN ALONE OR FATIGUED. KNOW YOUR EQUIPMENT AND DO NOT TAKE RISKS.

This manual is provided as a general guide for trained and qualified personnel well aware of the dangers inherent in handling potentially hazardous electrical transmission equipment.

The installation, operation, maintenance and service of this equipment involves risks both to personnel and equipment and must ONLY be performed by qualified personnel exercising due care. Anywave Communication Technologies, Inc. shall not be responsible for injury or damage resulting from improper handling or from the use of improperly trained or inexperienced personnel performing such tasks.

All local building and electrical codes as well as fire protection standards must be observed in the installation and operation of the equipment.



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1 Product Appearance

1.1 Front Panel



LAN

- Connector: 10M/100M Ethernet
- Note:Ethernet port for web-based remote control (ipaddress: 192.168.1.210, username/password: anywavecom/anywavecom)

> LED PWR

- Green light will be on when the DC voltage of internal power supply is within the normal range (48 VDC ~ 52 VDC).
- Green light will flash when the DC voltage of internal power supply is out of the normal range (48 VDC ~ 52 VDC).
- Green light will be off when the external power supply is turned off, or internal power supply module does not work.

➤ LED RS485

- Green light will flash once per second when the internal communication is normal.
- Green light will stay constantly on or off when the internal communication is abnormal.

➤ LED_FWD

- Blue light will be on when RF_OUT has power output.
- Blue light will be off when the RF button is turned off, or the PA enters the auto-protection mode and therefore shuts down its RF output. There are several situations which will result in auto-protection mode, such as the input power is too high, the reflected power is too high, or the temperature is too high.



➤ LED_ALARM

- Red light will be off if there is no alarm.
- Red light will be on if there is any alarm.
- > RESET: reserved.

Note:

- 1) The front fan covers can be removed to clean the air intake path. No screw driver is needed, and no disassembly of the PA is required.
- 2) When a warning occurs and the PA enters auto-protection mode, the only way to clear this state is to cycle power on the PA module once the problem(s) is resolved. Otherwise all warning LEDs will remain on even if the problem(s) no longer exists.



1.2 Back Panel



➤ RF IN

■ Connector: N
■ Impedance: 50Ω

Note: If input power from RF_IN is lower than rated input value, the output power will be lower than rated output power accordingly. This is because the PA has a fixed gain. If the input level from RF_IN is higher than the rated value, it will result in RF output distortion and performance deterioration. If the input level is more than 1 dB higher than the rated value or the output power is higher than preset FWD threshold, it may trigger the current-limiting function. The PA will enter the auto-protection mode, and there will be reduced RF output or even no RF output.

> RF OUT

■ Connector: 7/16 DIN■ Impedance: 50Ω

Note: RF_OUT must be connected with a load, otherwise the PA will enter the auto-protection mode and there will be in no RF output.

➤ RS485

■ Connector: DB9-M

■ Note: Connected to REMOTE (PRS-485-1) port of Controller, which is

used for control and communication between the Controller and

the PA.

➤ AC INPUT: 176~300VAC, 47~63Hz, 16A/220VAC (single-phase, 3-wire – L1, L2, GND)

> AC Power Breaker: ON/OFF



2 Specifications

Environment

Operation Temperature: -10 °C ~ +60 °C (+14 °F ~ +140 °F)
 Operation Humidity: 20 % ~ 90 % (non-condensing)

■ Atmospheric Pressure: 86 kPa ~ 106 kPa

Power Supply

■ Voltage: 176 ~ 300 VAC (full load)

Frequency: $47 \sim 63 \text{ Hz}$

RF Performance

■ Frequency: 54 MHz ~ 88 MHz

■ VSWR: ≤ 1.5

Shoulder Level: $\geq 36 \text{dBc}$ (with pre-correction ON)

■ Size: 480mm(W)*222mm(H)*423mm(L)

Note

1) The electrical interface characteristics are measured at rated power. Values may change.

Operating in abnormal conditions may result in damage to the equipment. Long operating hours in severe environments may reduce the reliability of the entire system, which may cause permanent damage to equipment. Make sure all electrical interface characteristics and environmental parameters are within the defined range listed above before operating this equipment.



3 Control Interface

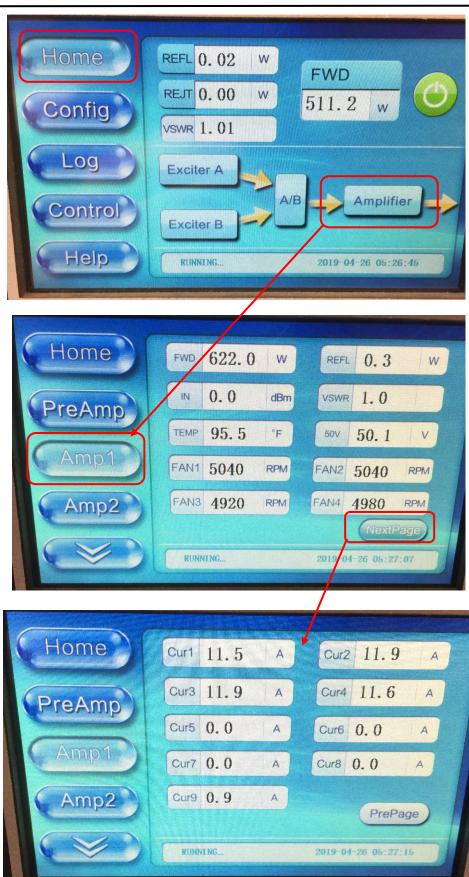
3.1 Local (Controller) Interface

Local control and monitoring of the PA unit can be accomplished via the Controller touch panel interface. Use a standard serial cable to connect the PA DB9 RS485 port to the Controller PRS-485-1 RS485 port (please reference the 500W VI TX QSG for the system interconnect diagram and details). With this connection established, the PA information will be displayed on the Controller touch screen and web interface, as shown below:

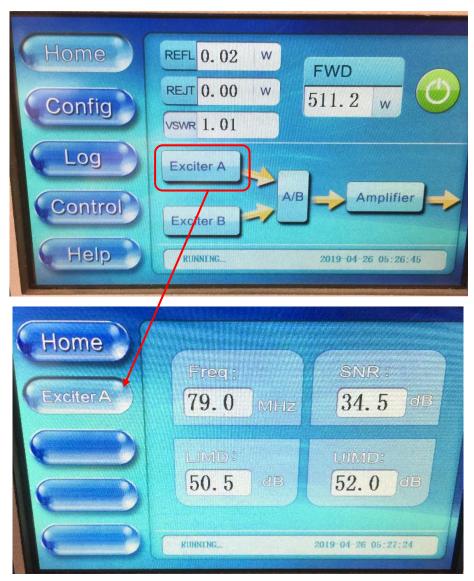


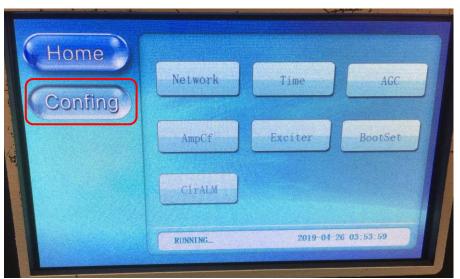
Note: The displayed settings and numbers contained in the screens below are for illustration purposes only and may be different from those in actual use.



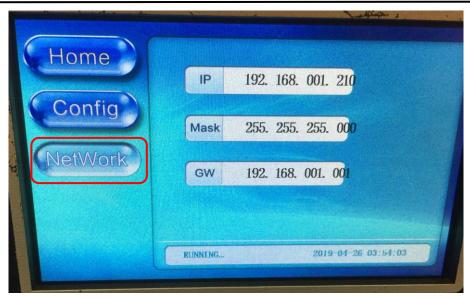


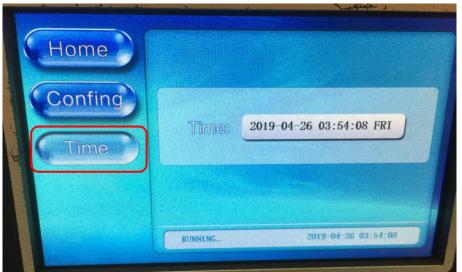






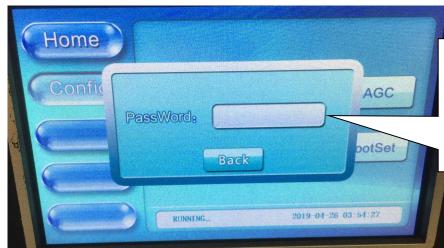






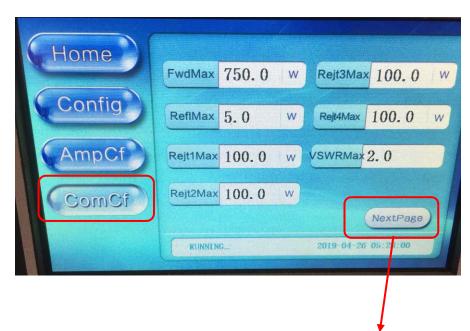




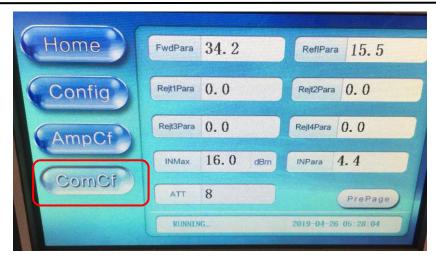


When press the AmpCf (Amplifier Configuration)
Button, you will be prompted to enter Password: 27654



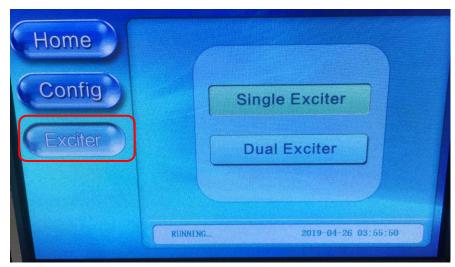


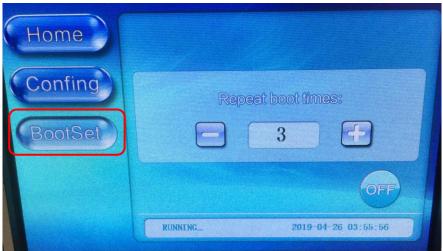


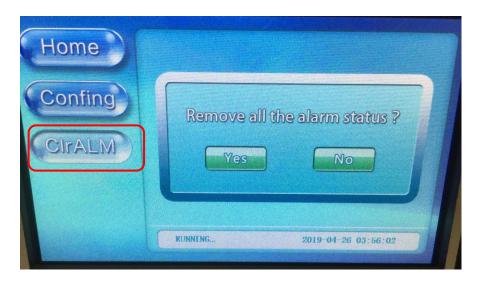




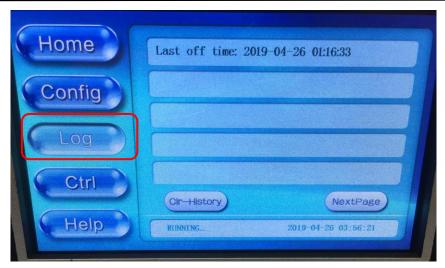




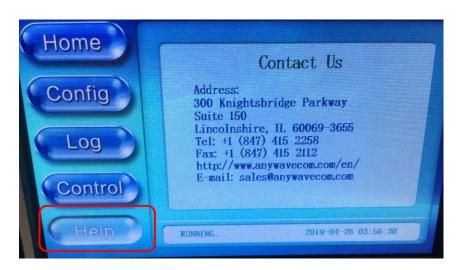














3.2 Web Interface

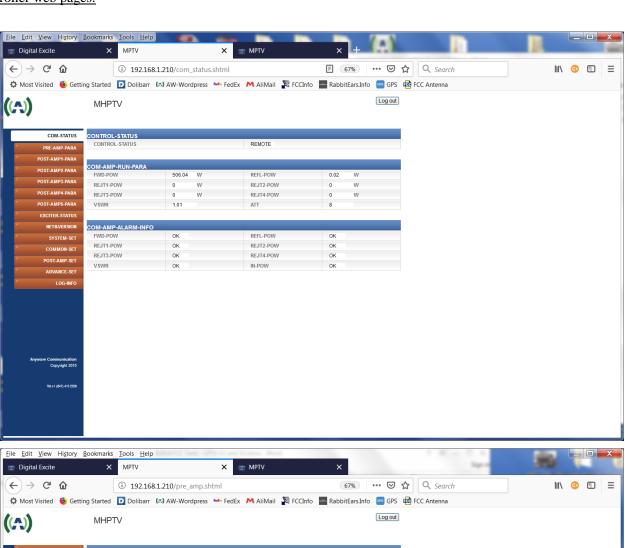
The 500W PA, Controller, and Exciter all have built-in web interfaces for system monitoring and control. Below are screenshots of the PA (192.168.1.200), Controller (192.168.1.210), and Exciter (192.168.1.143) web interfaces. Enter the IP address of the equipment in a web browser's address bar to cause a login window to pop up.

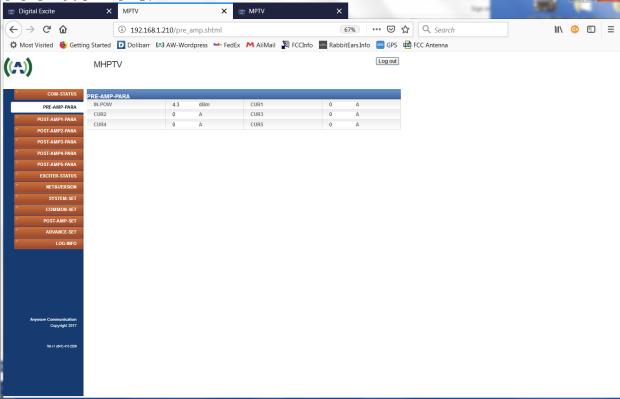


The "admin" tier provides full status and control of the equipment and is accessed with a username and password of "anywavecom" and "anywavecom" (case sensitive).

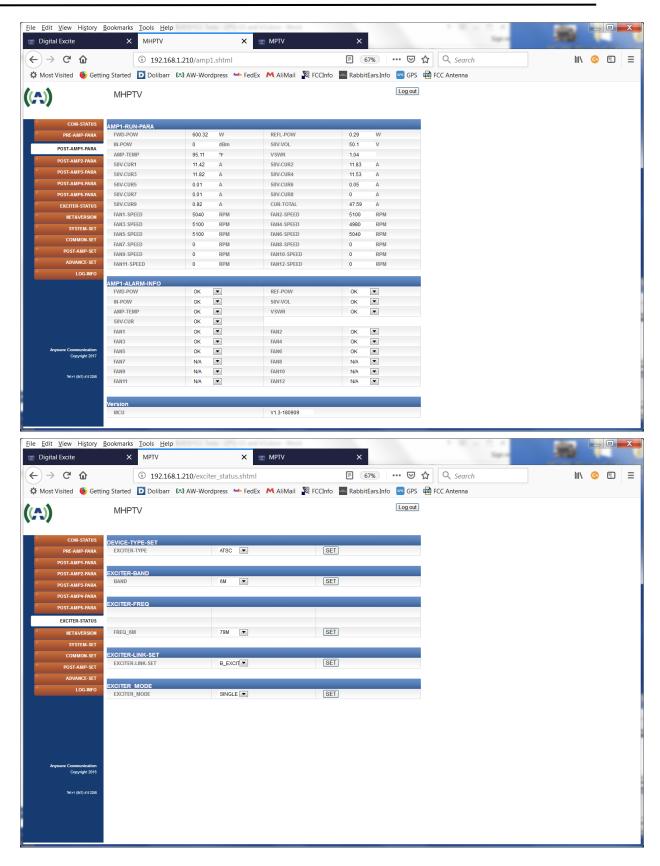


Controller web pages:

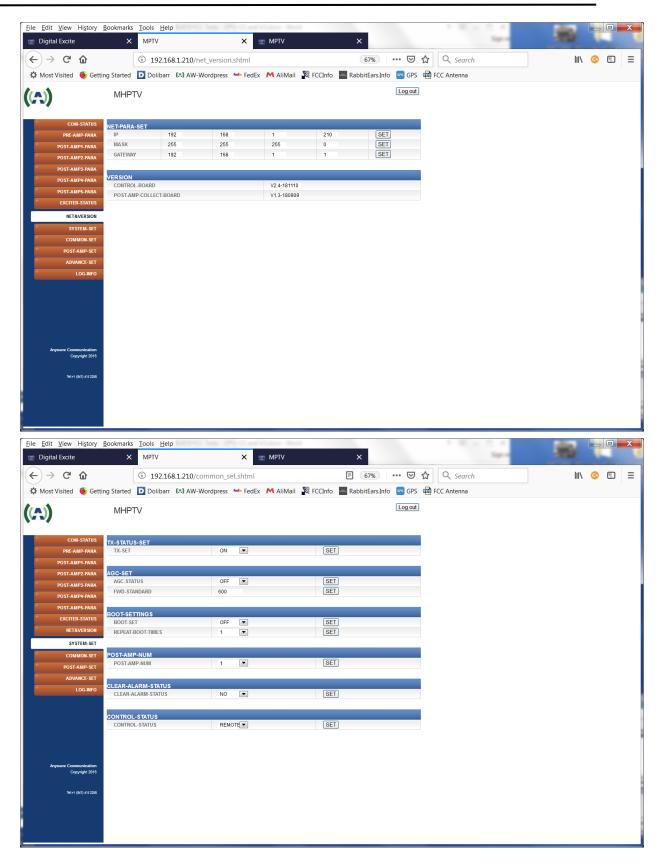




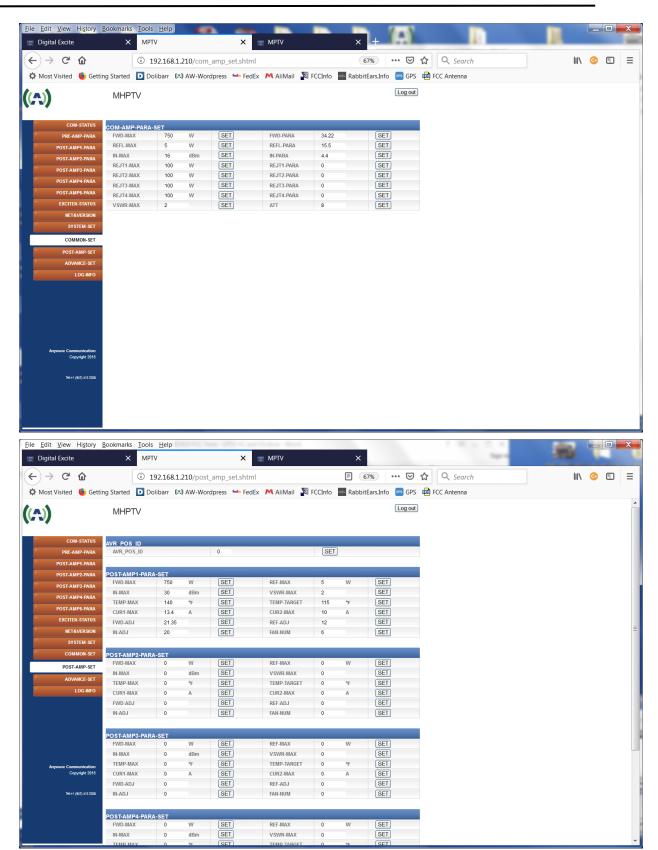




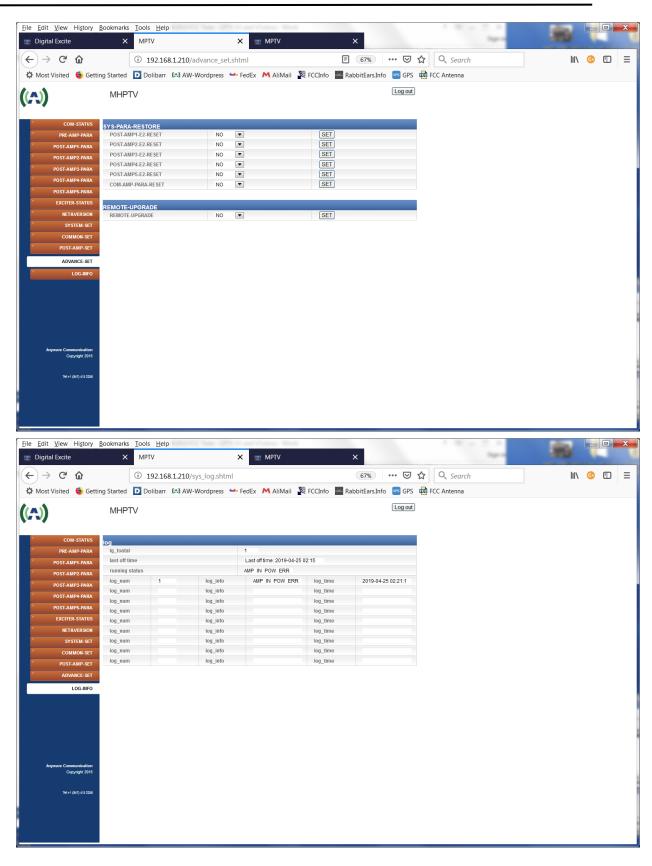






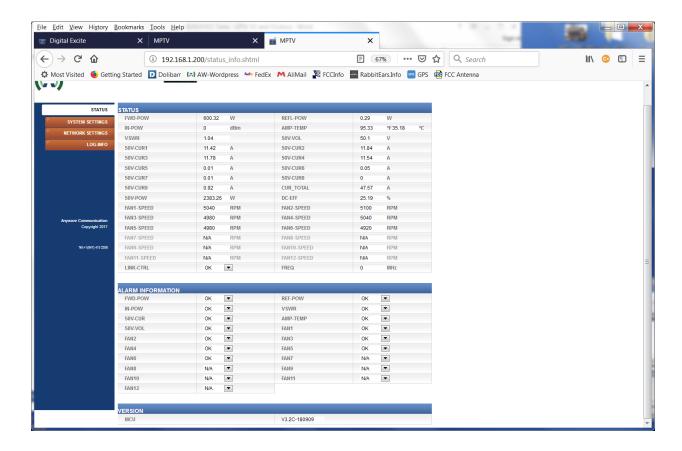




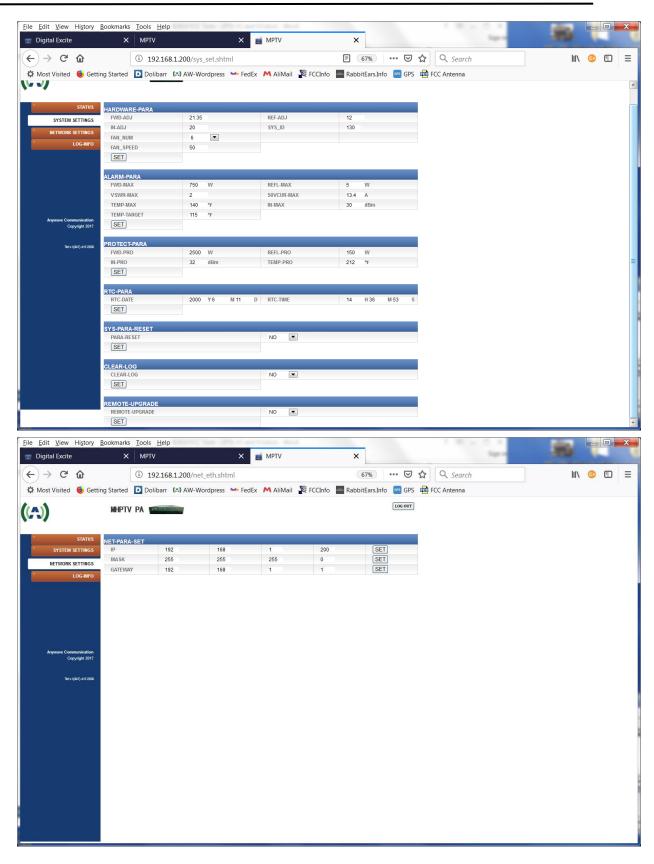




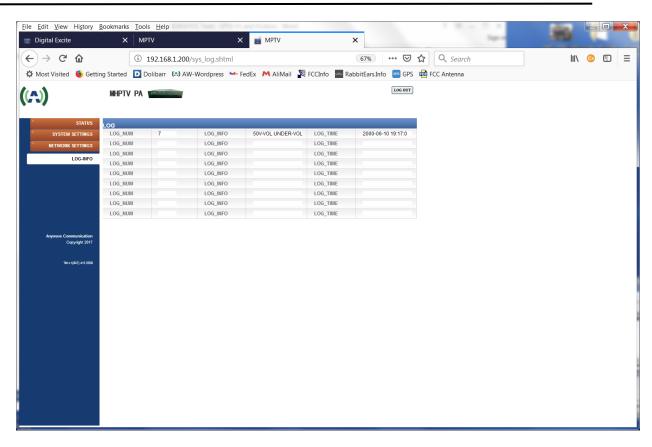
PA web pages:





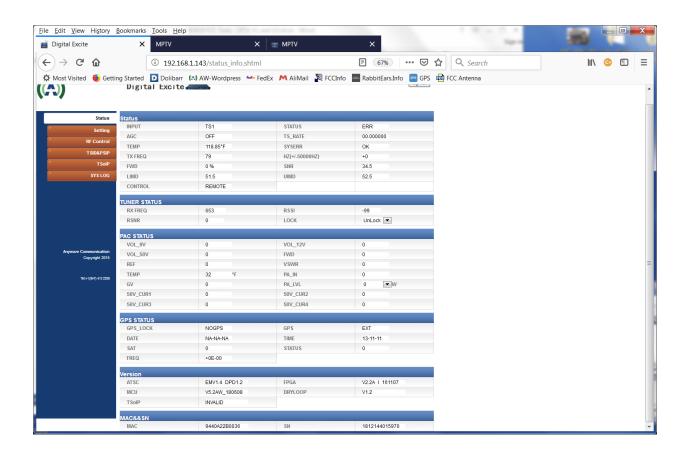




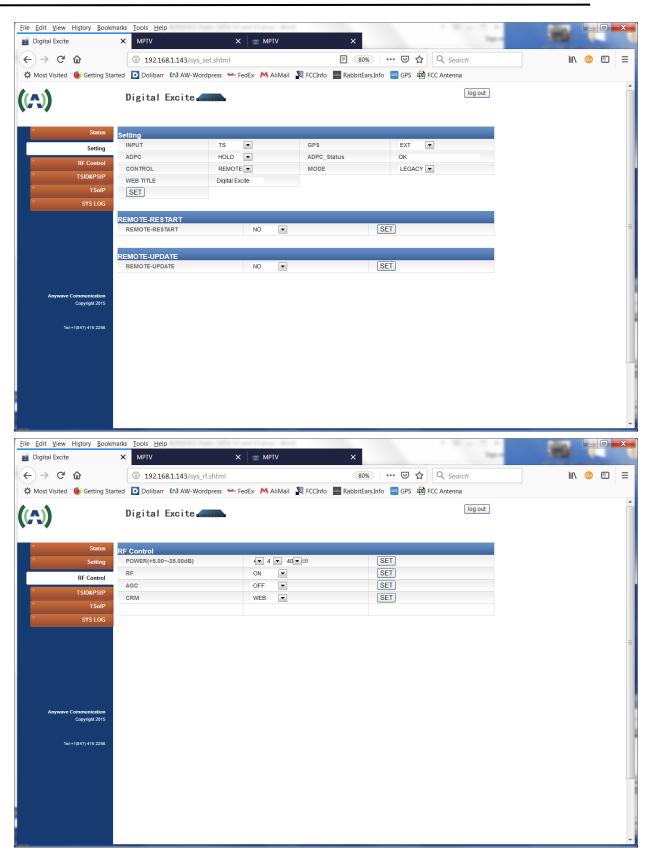




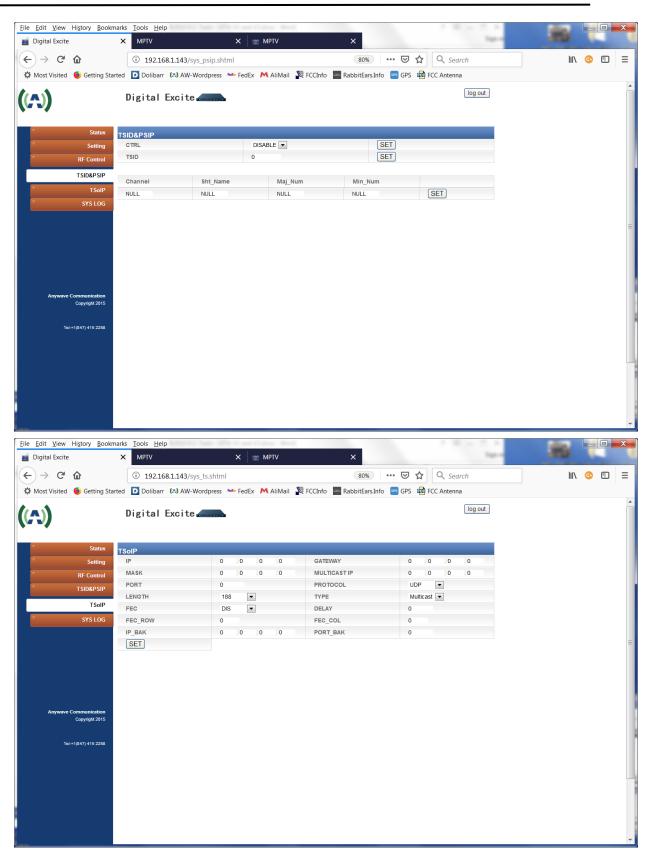
Exciter web pages:



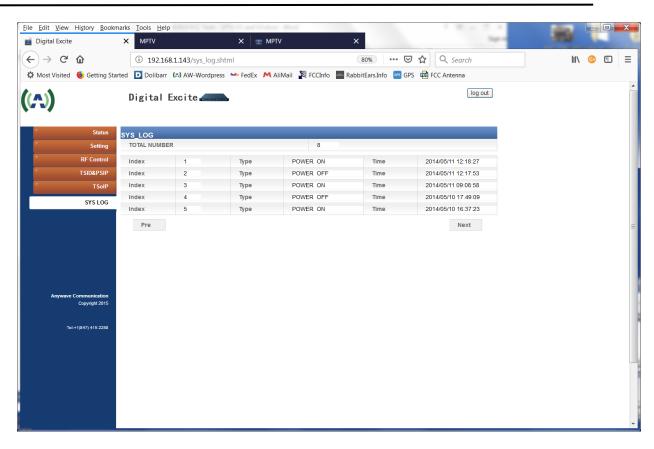
















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